

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In the Application of:** L. Wang

**Serial Number:** TBD

**Filing Date:** Herewith

**Title:** Wireless Communications Cellular  
Architecture for Improving  
Communications Resource Allocation

**Group Art Unit:** 2745

**Examiner:** D. Nguyen (Anticipated)

ASSISTANT COMMISSIONER FOR PATENTS  
Washington, DC 20231

**PRELIMINARY AMENDMENT**

SIR:

Prior to examination of the above-identified application, please enter the following amendments.

**In the Specification:**

On page 1, line 3, please add the "Cross-Reference to Related Patent Application" section as follows:

**CROSS-REFERENCE TO RELATED PATENT APPLICATION**

This patent application is a continuation of 09/440,475 filed November 15, 1999; which is a continuation of 08/862,095 filed May 22, 1997, now Patent No. 6,002,935 issued December 14, 1999.

**In the Claims:**

Please cancel claims 1–15 without prejudice to the subject matter contained therein.

Please add the following new claims:

-- 16. (New) A wireless communication system comprising a cluster of base stations each defining cells, the base stations having sectorized antennae defining generally hexagonal sectors within the cell, wherein the sectors are deployed according to:

a honeycomb pattern in a mutually interlocking arrangement, and  
a frequency reuse pattern in which each frequency set occurs at least twice in a cluster of four cells.

17. (New) The wireless communication system of claim 16, wherein each cell in the cluster is assigned a group of frequency sets that is unique within the cluster.

18. (New) The wireless communication system of claim 16, wherein the sectorized antennae have beamwidths of fifty to seventy degrees.

19. (New) The wireless communication system of claim 16, wherein the wireless communication system has a frequency reuse factor of  $K=2$ .

20. (New) The wireless communication system of claim 16, wherein frequency resources of the wireless communications system include at least six frequency sets and, for any clustered four adjacent base stations, each frequency set is allocated to at least two sectors of the four base stations.

21. (New) A wireless communications system comprising:  
a cluster of four base stations, each base station having sectorized antennae defining three sectors within a respective cell,  
wherein frequency resources of the wireless communications system include at least six frequency sets and each frequency set is allocated to at least two sectors within the cluster of four base stations.

22. (New) The wireless communications system of claim 21, wherein each cell in the cluster is assigned a group of frequency sets that is unique within the cluster.

23. (New) The wireless communications system of claim 21, wherein the frequency resources are allocated to provide at least one other sector between the two sectors that share a frequency set.

24. (New) A wireless communication system comprising a plurality of base stations, each having three NBTC directional antennae, and deployed according to a mutually interlocking arrangement, wherein a first set of base stations provided in a first line are NBTC Type I base stations that are separated from one another by a distance of  $1.5 R$ , and a second

set of base stations provided in a second line adjacent to the first line are NBTC Type II base stations that are separated from one another by a distance of 1.5 R.

25. (New) The wireless communication system of claim 24, wherein frequency resources of the wireless communications system include at least six frequency sets and one frequency set is allocated to each sector.

26. (New) The wireless communication system of claim 25, wherein adjacent base stations of similar NBTC Type have at least two sectors with the same frequency set.

27. (New) The wireless communication system of claim 25, wherein adjacent base stations of differing NBTC Type have at least one sector with the same frequency set.

28. (New) The wireless communication system of claim 16, wherein each frequency set is reused a second time by a sector in an adjacent cell.

29. (New) The wireless communications system of claim 21, wherein each frequency set is reused a second time by a sector in an adjacent cell. --

### CONCLUSION

Claims 16-29 are presented for examination and believed to be allowable. Favorable action is earnestly solicited. The Examiner is invited to contact the undersigned at (202) 220-4294 to discuss any matter concerning this application.

The Office is hereby authorized to charge any fees or credit any overpayments arising from this communication to Kenyon & Kenyon's Deposit Account No. 11-0600.

Respectfully submitted,

KENYON & KENYON



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